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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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04/13/2005

Olaf Pichler

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EXAMINER

HODGE, DEXTER

ART UNIT

PAPER NUMBER

4177

MAIL DATE

DELIVERY MODE

12/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/508,751	PICHLER ET AL.	
	Examiner	Art Unit	
	Dexter Hodge	4177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 15-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 15-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09/21/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/13/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because the abstract length is above the maximum length at 226 words long. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 15-29 are rejected under 35 U.S.C. 102(b) as being unpatentable by Kenneth Guild *et.al.*, (WO 01174111 A1) (hereafter referred to as Guild).

Regarding **claim 15**, Guild teaches an optical cross-connect (OXC) for use in a wavelength division multiplex (WDM) network, comprising: a) a plurality of optical inputs for receiving respective WDM communication bearing radiation having channels ; b) a plurality of optical outputs for outputting the respective WDM radiation switched by the OXC (**Fig.8, Fig.9; Pg.2 lines 13-19**); c) a single stage optical switching matrix for switching the WDM radiation between the optical inputs and outputs, the optical switching matrix comprising a respective switching matrix for each wavelength channel of the WDM radiation (**Fig.9, λ_1 , λ_2 , λ_N , 506**); d) a further plurality of optical inputs and outputs for respectively adding and dropping selected wavelength channels (**Fig.9, λ_1 , λ_2 , λ_N , 501, 504; Pg.2 lines 13-19**); and e) a respective multistage optical switching matrix for selectively connecting the further plurality of optical inputs and outputs to inputs and outputs of the single stage switching matrix (**Fig.8, 401, connected to 410, Pg.10 line 17-23; Fig.9, 503, 506; Pg.10 line 34-Pg.11 lines 1-5**).

Regarding **claim 16**, Guild teaches the OXC according to claim 15, in which the multistage switching matrix comprises a multistage Clos network in which the single stage switching matrix comprises one stage of the Clos network (**Fig.8, 400, 401, 410; Pg.10 lines 13-30**).

Regarding **claim 17**, Guild teaches an optical cross-connect (OXC), comprising:

a) a plurality of input channels for through traffic; b) a plurality of output channels for the through traffic; c) a first group of optical switching matrices for connecting each through traffic input channel to any of the through traffic output channels, each through traffic input channel being connected to an input of a switching matrix of the first group, and each through traffic output channel being connected to an output of the switching matrix of the first group (**Fig.8 410; Fig.9 506, λ_1 , λ_N , λ_1 , λ_2 , λ_N ; Pg.2 lines 25-26**); and d) a third plurality of input channels for adding traffic, each add traffic input channel being connected to an input of a second group of switching matrices (**Fig.9 λ_1 , λ_2 , λ_N , 506, 501, 505; Pg.2 lines 13-19**), wherein outputs of the second group of switching matrices are connected to inputs of a third group of switching matrices (**Fig.8, 408, 401, Fig.9, 504; Fig.9, 503; Pg.10 lines 13-34**), and outputs of the third group of switching matrices are connected to inputs of the first group of switching matrices such that the switching matrices of the second, third and first groups form a Clos network (**Fig.8, 400, 401, 408, 409, 410; Pg.10 lines 13-30; Fig.9 λ_1 , λ_2 , λ_N , , 501, 503, 506; Pg.10 lines 13-34**).

Regarding **claim 18**, Guild teaches the OXC according to claim 17, and further comprising a plurality of demultiplexers (**Pg.2 line 23**), each having an input for connection to an optical input which carries WDM radiation comprising a plurality of wavelength channels, and a plurality of outputs for outputting one of these wavelength

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channels to one of the through traffic input channels (**Fig.9, λ_1 , λ_N , λ_1 , λ_2 , λ_N ; Pg.2 lines 13-19**).

Regarding **claim 19**, Guild teaches the OXC according to claim 18, in which each demultiplexer is connected to each switching matrix of the first group by one input channel (**Fig.9; λ_1 , λ_N , λ_1 , λ_2 , λ_N ; Pg.2 lines 13-19**).

Regarding **claim 20**, Guild teaches the OXC according to claim 18, in which the demultiplexers are wavelength demultiplexers outputting a respective wavelength channel to an output defined according to a carrier wavelength of the wavelength channel, and the outputs of various demultiplexers for outputting the wavelength channels of a same carrier wavelength are connected to a same switching matrix of the first group (**Pg.2 lines 23-24, Fig.8, "Input", 410; Fig.9, λ_1 , λ_N , 506, λ_1 , λ_2 , λ_N ; Pg.2 lines 13-19**).

Regarding **claim 21**, Guild teaches the OXC according to claim 17, wherein each switching matrix of the second group has a number M of inputs for adding traffic (**Fig.9, 501**), and a number of at least 2M-1 outputs (**Fig.9, 504**) connected to inputs of switching matrices of the third group (**Pg.2 lines 22-34, Pg.3 lines 22-34, Fig.8, 401; Fig.9, 504, 503; Pg.10 line 34- Pg.11 lines 1-5**).

Regarding **claim 22**, Guild teaches the OXC according to claim 17, wherein each optical switching matrix of the first group has a number M of outputs for through traffic (**Fig.9, 506**), and a number of at least $2M-1$ inputs connected to outputs of switching matrices of the third group (**Pg.2 lines 22-34, Pg.3 lines 22-34, Fig.8, 401; Fig.9, 504, 503; Pg.10 line 34-Pg.11 lines 1-5**).

Regarding **claim 23**, Guild teaches an optical cross-connect (OXC), comprising:
a) a plurality of input channels for through traffic; b) a plurality of output channels for the through traffic (**Fig.8, Fig.9; Pg.2 lines 13-19**); c) a first group of optical switching matrices for connecting each through traffic input channel with any of the through traffic output channels, each through traffic input channel being connected to an input of a switching matrix of the first group, and each through traffic output channel being connected to an output of a switching matrix of the first group (**Fig.8 410; Fig.9 506, $\lambda_1, \lambda_N, \lambda_1, \lambda_2, \lambda_N$; Pg.2 lines 25-26**); d) a plurality of output channels for dropping traffic (**Fig.8, 409; Fig.9, 504**), each drop traffic output channel being connected to an output of a fifth group of switching matrices (**Fig.8, 403, 402; Fig.9, 503**), wherein inputs of the fifth group of switching matrices are connected to outputs of a fourth group of switching matrices (**Fig.8, 405, 404; Fig.9, 503**), and inputs of the fourth group of switching matrices are connected to outputs of the first group of switching matrices such that the switching matrices of the first, fourth and fifth groups form a Clos network (**Pg.2 lines 22-34, Pg.3 lines 22-34, Fig.8, 409, 408, 401, 410; Pg.10 lines 13-23; Fig.9, 504, 505, 503; Pg.10 line 34-Pg.11 lines 1-5**).

Regarding **claim 24**, Guild teaches the OXC according to claim 23, and further comprising a plurality of multiplexers, each having an output for connecting to an optical output which carries WDM radiation comprising a plurality of wavelength channels, and a plurality of inputs for inputting one of these wavelength channels from one of the through traffic output channels (**Fig.8 MUXs before “output”; Fig.3 37, 33, λ_1 , λ_N , λ_1 , λ_{32} , λ_{128} ; Pg.7 line 24; Fig.9 506, λ_1 , λ_2 , λ_N ; Pg.2 lines 25-26**).

Regarding **claim 25**, Guild teaches the OXC according to claim 24, in which each multiplexer is connected to each switching matrix of the first group by one output channel (**Fig.9 506, λ_1 , λ_2 , λ_N ; Fig.3 37, 33; Pg.2 lines 25-26**).

Regarding **claim 26**, Guild teaches the OXC according to claim 23, in which each optical switching matrix of the fifth group (**Fig.8, 403, 402; Fig.9, 503**) has a number M of outputs for dropping traffic, and a number of at least 2M-1 inputs connected to outputs of switching matrices (**Fig.7A-D, Fig.7C; Pg.10 line 5; Pg.10 lines 13-34**) of the fourth group (**Fig.8, 405, 404; Fig.9, 503**).

Regarding **claim 27**, Guild teaches the OXC according to claim 23, in which each optical switching matrix of the first group has a number M of inputs for through traffic, and a number of at least 2M-1 outputs connected to inputs of switching matrices of the

fourth group (**Fig.3, 1, N, 33, 35 “Local clients”; Fig.7A-D, Fig.7C; Pg.10 line 5; Pg.10 lines 13-34; Fig.8, 405, 404, Fig.5 200; Pg.9 lines 9-11; Fig.9, 503, 506).**

Regarding **claim 28**, Guild teaches the OXC according to claim 17, in which the second group of optical switching matrices are identical (**Fig.9 501; Pg.10 lines 32-33).**

Regarding **claim 29**, Guild teaches the OXC according to claim 23, in which the fifth group of optical switching matrices are identical (**Fig.8, 401, 403, 402; Pg.10 lines 13-30).**

Conclusion

6. Any response to this Office Action should be **faxed** to (571) 273-8300 or **mailed to:**

Commissioner for Patents,
P.O. Box 1450
Alexandria VA 22313-1450

Hand-delivered responses should be brought to
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dexter Hodge whose telephone number is 571-270-0138. The examiner can normally be reached on Mon-Thurs 8AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Tieu can be reached on 571-272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dexter Hodge
Patent Examiner AU4177
November 8, 2007

/Benny Q Tieu/
Supervisory Patent Examiner, Art Unit 4177